APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,933	09/28/2000	George M. Ericson	JW-DG-668	8150

7590 03/11/2004	EXAMINER
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ART UNIT	PAPER NUMBER
2182	14

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DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication app ars on the cover sheet with the correspondenc address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _07 January 2004_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-15 and 31-42_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) _37-42_ is/are allowed.

6) ☒ Claim(s) _1-15_ is/are rejected.

7) ☒ Claim(s) _31-36_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _12 January 2004_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs

of 35 U.S.C. 102 that form the basis for the rejections under

this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published
> under section 122(b), by another filed in the United States before the
> invention by the applicant for patent or (2) a patent granted on an
> application for patent by another filed in the United States before the
> invention by the applicant for patent, except that an international
> application filed under the treaty defined in section 351(a) shall have the
> effects for purposes of this subsection of an application filed in the
> United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English
> language.

2.   Claims 1,2, and 12-14 are rejected under 35 U.S.C. 102(e)

as being anticipated by Chong, Jr. (U.S. Patent No. 6,370,605

hereinafter "Chong").

3.   Referring to claim 1, Chong teaches a storage system for

storing data for at least one host computer, the system

comprising:

a plurality of disk drives (see items labeled 161 and 162

in figure 5 and lines 16-57 of column 3);

a switch having a plurality of input and output ports, the

switch being connected between the plurality of disk drives and

the at least one host computer for at least connecting one of

the input ports on which the data was received to one of the

output ports (see item labeled 221 or 222 and lines 16-57 of column 3);

an aggregator (control module) connected to the switch for at least managing operation of the plurality of disk drives (see item labeled 241 or 242 in figure 5 and see lines 16-57 of column 3; Note that the control module performs the managing operation of the plurality of disk drives, thus the control module is the aggregator as claimed);

operation coordinating logic operatively coupled to coordinate operation of the plurality of disk drives, the switch, and the aggregator in a manner to control flow of certain of the data between the at least one host computer and the plurality of disk drives to be through the switch and not through the aggregator in a manner which does not change the operation of the at least one host computer (see lines 16-57 of column 3).

4.   Referring to claim 2, Chong teaches the switch is a fibre channel switch and the operation coordinating logic utilizes a protocol including the fibre channel protocol (see paragraph bridging columns 10 and 11).

5.   Referring to claim 12, Chong teaches a computer data

storage system wherein the data is grouped in frames,

comprising:

a plurality of disk drives for storing and retrieving the

data (see items labeled 161 and 162 in figure 5 and lines 16-37

of column 3);

an aggregator for at least managing operation of the

plurality of disk drives (see item labeled 241 or 242 in figure

5 and see lines 16-57 of column 3; Note that the control module

performs the managing operation of the plurality of disk drives,

thus the control module is the aggregator as claimed);

each of the frames including a header containing binary

fields designating parameters including at least destination ID,

the header being associated with that portion of the data

contained with each of the frames (see figure 10B);

a switch connected between the computer, the disk drives,

the aggregator for both controllably selecting certain ones of

the data frames and flowing the portion of the data grouped in

the certain one sand having the aggregator as the destination ID

directly between the computer and the plurality of disk drives,

whereby data transfer through the aggregator is avoided for

certain ones of the data (see lines 16-57 of column 3).

6.   Referring to claim 13, Chong teaches the switch includes

control logic arranged to be commanded by the aggregator to

selectively switch certain ones of the frames directly between

the computer and the plurality of disk drives and all other of

the frames indirectly therebetween through the aggregator (see

lines 51-65 of column 10; Note that Chong discloses several

transfers can occur simultaneously through the multi-ported

switch so one transfer can be currently in progress while

another transfer, that is just starting, must go through control

module (aggregator) to be set up for direct communication).

7.   Referring to claim 14, Chong teaches the switch includes a

frame header selector (see lines 7-19 of column 19), an input

frame header buffer (see item 86a in figure 9), and a map table

(see item 114 in figure 11).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the

art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

9.   Claims 3-8,10 and 11 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Chong in view of Applicant's admitted

prior art (AAPA).

10.   Referring to claim 3, Chong fails to explicitly set forth

the limitation that the fibre channel protocol includes the FC-2

frame headers.

The Applicant admits that FC-2 frame headers are part of

the five level protocol stack as set forth in the ANSI Fibre

Channel Standard that is commonly used by manufacturers of fibre

channel hardware (see lines 11-23 of page 5 and lines 1-11 of

page 6 of the Applicant's specification).

It would have been obvious to one of ordinary skill in the art

at the time of the applicant's invention to modify the system of

Chong such that the fibre channel protocol includes the FC-2

frame headers in order to comply with the ANSI Fibre Channel

Standard.

11.   Referring to claims 4 and 5, Chong discloses the frame

headers has a predetermined set of information fields including

but not limited to destination ID, source ID, sequence ID,

sequence count, originator's exchange ID, and respondent's

exchange ID (see figures 10A and 10B and the paragraph bridging

columns 18 and 19).

12.   Referring to claim 6, Chong discloses the operation

coordinating logic comprises mapping logic for generating a

mapping command designating the host computer as the source ID.

the aggregator as the destination ID, and a first particular

originator's exchange ID, and further having a mapped

destination ID which designates a particular one of the

plurality of disk drives which is connected to a particular one

of the output ports (see lines 20-50 of column 19).

13.   Referring to claim 7, Chong teaches the operation-

coordinating logic comprises unmapping logic with for generating

an unmapping command designating the host computer as the source

ID, the aggregator as the destination ID, and the first

particular said originator's exchange ID whereby the effect of

the operation of the mapping command is neutralized (see lines

55-67 of column 25 and lines 1-17 of column 26).

14.   Referring to claim 8, Chong teaches the operation-

coordinating logic includes proxy logic for generating a proxy

command having the aggregator as the source ID, the particular

one of the plurality of disk drives as the destination ID, and

the first particular originator ID, and further having a proxy

destination ID which designates a particular at least one host

computer (see lines 20-50 of column 19; Note Examiner is relying

on applicant's definition of a proxy command found on lines 7-11

of page 8 of the specification).

15.   Referring to claim 10, Chong teaches the host computer

generates data having the at least one host computer as the

source ID, the aggregator as the destination ID, and the first

particular originator's exchange ID (see paragraph bridging

columns 18 and 19).

Referring to claim 11, Chong discloses the system includes logic

for selecting certain of the data to obtain to obtain particular

data words and wherein each of the words is operated upon by the

operation coordinating logic in a manner to steer each of the

words directly to a particular one of the plurality of disk

drives (see lines 8-14 of column 4).

16.   Claim 9 is rejected under 35 U.S.C. 103(a) as being
unpatentable over Chong in view AAPA and further in view of
Hoese et al. (U.S. Patent No. 6,148,421 hereinafter "Hoese").

17.   Referring to claim 9, the combination of Chong and AAPA
fails to disclose transfer-ready logic for generating a
transfer-ready command having said aggregator as a source IC,
the at least one host computer as the destination ID and the
first particular originator's exchange ID.

Hoese teaches transfer-ready logic for generating a
transfer-ready command (see lines 5-25 of column 5).
It would have been obvious to one of ordinary skill in the art
at the time of the applicant's invention to modify the
combination of Chong and AAPA with the teachings of Hoese such
that it comprises transfer-ready logic for generating a
transfer-ready command having said aggregator as a source IC,
the at least one host computer as the destination ID and the
first particular originator's exchange ID in order for the
initiator to know when the target is ready to receive data as
suggested by Hoese (see lines 5-25 of column 5).

18.   Claim 15 rejected under 35 U.S.C. 103(a) as being
unpatentable over Chong in view of Muller et al (U.S. Patent No.
5,938,736 hereinafter "Muller").

19.   Referring to claim 15, Chong fails to teach the frame
header selector is a frame header mask.

      Muller teaches a system wherein the frame header selector
is a frame header mask (see lines 34-43 of column 7).
It would have been obvious to one of ordinary skill in the art
at the time of the applicant's invention to modify the system of
Chong with the teachings of Muller such that the frame header
selector is a frame header mask because masks are easy to
implement and the headers are all of fixed size thus easy to
extract with a mask.

Allowable Subject Matter

20.   Claims 37-42 are allowed.

21.   Claims 31-36 are objected to as being dependent upon a
rejected base claim, but would be allowable if rewritten in
independent form including all of the limitations of the base
claim and any intervening claims.

Response to Arguments

22.   Applicant's arguments filed 1/7/04 have been fully

considered but they are not persuasive. The applicant argues:

1) There is no operation coordinating logic which

coordinates operations to control flow of *certain data* between a

host computer and disk drives to be through the switch and not

through the aggregator, as required by claim 1, since data

always does not pass through the aggregator (emphasis added)

(see the second full paragraph of page 14 and a similar argument

at the second full paragraph of page 16 of applicant's remarks

filed 1/7/04).

As per argument 1, the Examiner disagrees. Chong does teach

operation coordinating logic which coordinates operations to

control flow of *certain data* between a host computer and disk

drives to be through the switch and not through the aggregator,

as required by claim 1. At lines 39-57 of column 3, Chong

discloses command data is received by the switch and is

subsequently directed to the storage controller (aggregator),

where the command data is translated into one or more commands

and processed to generate frame header substitution information.

These translated commands and frame header substitution

information is then transferred to back to the switch, which in

turn transfers to translated commands to the appropriate storage

devices. Chong further teaches that one or more frames

associated with the data transfer operation are routed to the

storage devices without passing through the storage controller

(aggregator). This citation clearly shows that **certain data** is

transferred from the host to the storage device through the

switch and not the aggregator as required by claim 1 (emphasis

added).

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action

is set to expire THREE MONTHS from the mailing date of this

action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action

is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated

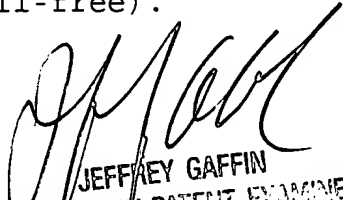from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than
SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Eron J
Sorrell whose telephone number is 703 305-7800. The examiner
can normally be reached on Monday-Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be
reached on 703 308-3301. The fax phone number for the
organization where this application or proceeding is assigned is
703-872-9306.

Information regarding the status of an application may be
obtained from the Patent Application Information Retrieval
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access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

EJS
March 9, 2004

JEFFREY GAFFIN
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